REMARKS

Status of the Claims

Claims 2-11 and are 13-17 are present in this application. Claim 1 is independent.

The claims have been amended to make minor corrections. Claims 2 and 7 have been amended to overcome objections made by the Examiner in the outstanding Office Action. No new matter has been added.

Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of some of the certified priority documents.

Acknowledgment of all priority documents in the next Office Action is respectfully requested.

Information Disclosure Citation

Applicants thank the Examiner for considering the references supplied with the Information Disclosure Statements filed on March 22, 2006, and June 28, 2006, and for providing Applicants with an initialed copy of the PTO-SB08 form filed therewith.

Each of the Information Disclosure Statements filed by Applicants to date has been considered by the Examiner, and initialed PTO-SB08 forms have been provided by the Examiner. Therefore, no outstanding issues remain with respect to the consideration of the Information Disclosure Statements.

Drawings

Since no objection has been received, Applicant assumes that the drawings are acceptable and that no further action is necessary. Confirmation thereof in the next Office Action is respectfully requested.

Restriction Requirement

The Examiner has withdrawn the Restriction Requirement, and claims 2-11 and 13-17 have been examined on the merits.

Claim Objections

The Examiner has objected to claims 2 and 7 because of several informalities. In order to overcome this objection, Applicants have amended claims 2 and 7 in order to correct the deficiencies pointed out by the Examiner. Reconsideration and withdrawal of this objection are respectfully requested.

Claim Amendments

Applicants have amended the claims in order to correct minor typographical errors, and to place the claims in better form under U.S. practice. The claim amendments are not being made in response to any statutory requirement for patentability, and have not been narrowed in scope. Instead, the claims have been amended merely to recite the subject matter therein more clearly.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 2, 5, 10, 11, 16 and 17 stand rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

The Examiner has set forth certain instances wherein the claim language lacks antecedent basis or is not clearly understood.

In order to overcome this rejection, Applicants have amended the claims to correct each of the deficiencies specifically pointed out by the Examiner. Applicants respectfully submit that the claims, as amended, particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejection Under 35 U.S.C. § 102

Claims 2-11 and 13-17 stand rejected under 35 U.S.C. § 102(X) as being anticipated by Mälkki et al. (U.S. 6,582,509). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

Applicants respectfully submit that alternative a) is not anticipated by the '509 reference.

In alternative a) of claim 2:

A. air, or other gases, is dissolved at a low temperature into a water gel of starch, after which

B. the raising of the temperature generates a gas or liquid phase separation, and

C. the product is crosslinked to achieve a stable foam.

The Mälkki reference contains a different teaching. First (referring to Claims 1 and 3, cited by the Examiner), the starch granules are swollen by contacting them with a first liquid to provide "swelled starch granules". This feature does not correspond to element A cited above, since there is not formed a water gel of starch. In fact, claim 3 explicitly states that the temperature is below the gelatinization temperature of the starch granule.

Second, Mälkki stabilizes the swelled starch granules only after they have been swollen (cf. claim 11 and column 4, lines 38 to 40). By contrast, in the present invention, element B precedes element C.

Third, element A comprises an active procedure, viz. the dissolving of air in a water gel. In Mälkki the bubbles are formed by evaporating water or other solvent (cf. column 4, line 43). Whether or not some air has dissolved in the water from the ambient is not of relevance for the forming of bubbles - Mälkki crosslinks the swelled granules and evaporates off the solvent to form cavities and bubbles. In the present invention, air is actively dissolved in the aqueous gel of starch, and the air is released by increasing the temperature.

Indeed, Mälkki appears to be actually completely silent about steps A and B as claimed in claim 2.

European Patent Application No. 04 767 090.6

A copy of an earlier response filed with the EPO is submitted herewith for the consideration of the Examiner.

With reference to the Communication dated 23 November 2006, we respectfully submit the following:

The present invention concerns a porous starch-based pigment or filler product, which is characterized in that it comprises a stable foam, which contains foam bubbles, the average size of which is less than approximately 10 micrometers (emphasis added).

A product of the instant kind can be produced by a process as claimed in claim 2, comprising four alternative methods.

According to the Communication dated June 4, 2007, a product of the kind defined above is anticipated by document D1 and for this reason, the four alternative methods of claim 2 are not linked together by a common inventive concept.

We disagree. DI is discussed in the specification on page 1, lines 25 to 33. As indicated therein, D1 concerns a method of producing an organic pigment by swelling of starch granules to increase their volume - yet such that the granular structure is preserved: "Unheated starch granules can be swollen below the gelatinization temperature to a 2-3-fold volume or even more without altering the shape or structure of the granule." (column 3, lines 13 to 15, emphasis added).

The granule according to DI is no foam, it is an expanded granule having pores. But it is still a granule. The term "foam" does not appear in D1.

By contrast, the present products are foams. In particular, they are foams formed by micro bubbles/micro capsules which are mainly gas-filled and held together by thin films cf. page 6, fourth paragraph, which contains a detailed discussion about the structure of the present foams).

The difference between the present invention and the granules is evident based on the definition of the product of D1 (cf. claim 1 of D1): "an organic pigment comprising **dried**

than approx. 10 micrometers. Thus, the present product is a true foam formed by a plurality of bubbles, whereas the known product is an expanded granule.

The present foams have excellent optical properties, but they can be used not only as light scattering pigments but also as fillers to produce a paper or board having excellent opacity than what is achievable with mineral pigments or fillers.

The product of D1 is suggested for use "as a white pigment especially in coating of starch, in paints and in cosmetic products" (cf. abstract). Although paper applications are generally discussed in the introduction with respect to other pigments, there is no specific suggestion that the known product would have suitable properties of use as a paper or board pigment or filler.

As regards the method of preparation, we note that the products are prepared according to D1 by swelling starch granules in a first liquid, stabilizing the swollen granules, forming cavities filled with gas in the swollen granules by removing the first liquid and then drying the swollen starch granules to form granules having cavities filled with gas.

The four alternative methods according to the present invention clearly differ from that method. In none of the alternatives is there a procedure based on swelling in a liquid and forming cavities by removing the liquid. Rather, the three first methods are based on steps where bubbles/foam is formed by introduction of gas into a liquid phase starch (derivative).

In the fourth alternative, a starch derivative (not starch granule) in solid form is contacted with carbon dioxide which is capable of forming a highly porous material. It should be noted that although the term swelling is used, this swelling takes place with gas which leads to a much greater degree of porosity than when swelling of a granule takes place in a liquid. The actual

carbon dioxide method is disclosed in more detail in the description on pages 8 and 9, which shows that it also leads to a stable foam.

It is submitted that the claimed invention is novel and inventive, and we therefore respectfully solicit allowance of the subject matter covered by the pending set of claims.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

In view of the above amendments and remarks, Applicant believes that the pending application is now in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart, Reg. No. 21,066, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: January 28, 2010

Respectfully submitted,

By Raymond C. Stewart

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